

Introduction

References and Presentation at:
http://www.elinux.org/Open_tools

Introduction

- Dave Anders aka prpplague

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- Dave Anders aka prpplague
- Currently Contracted with TI

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- Dave Anders aka prpplague
- Currently Contracted with TI
- Partners in TinCanTools

Introduction

- Dave Anders aka prpplague
- Currently Contracted with TI
- Partners in TinCanTools
- Open Tools for Board Bringup

Introduction

- Dave Anders aka prpplague
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- Partners in TinCanTools
- Open Tools for Board Bringup
 - Open Tools History

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- Dave Anders aka prpplague
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- Open Tools for Board Bringup
 - Open Tools History
 - Open Hardware Solutions

Introduction

- Dave Anders aka prpplague
- Currently Contracted with TI
- Partners in TinCanTools
- Open Tools for Board Bringup
 - Open Tools History
 - Open Hardware Solutions
 - Open Software Solutions

Open Tools History

- Open Tools in Science

Open Tools History

- Open Tools in Science
 - Experiments often require special tools

Open Tools History

- Open Tools in Science
 - Experiments often require special tools
 - New tools are shared with other scientists

Open Tools History

- Open Tools in Science
 - Experiments often require special tools
 - New tools are shared with other scientists
 - Robert Bunsen - Bunsen Burner

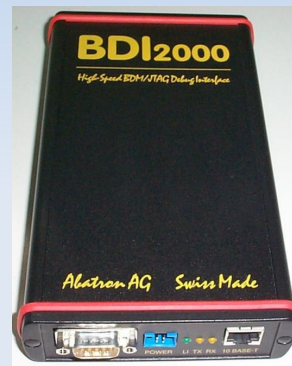


Open Tools History

- Open Tools in Science
- Commercial Solutions

Open Tools History

- Open Tools in Science
- Commercial Solutions



Open Tools History

- Open Tools in Science
- Commercial Solutions
 - MS Windows Operating Systems

Open Tools History

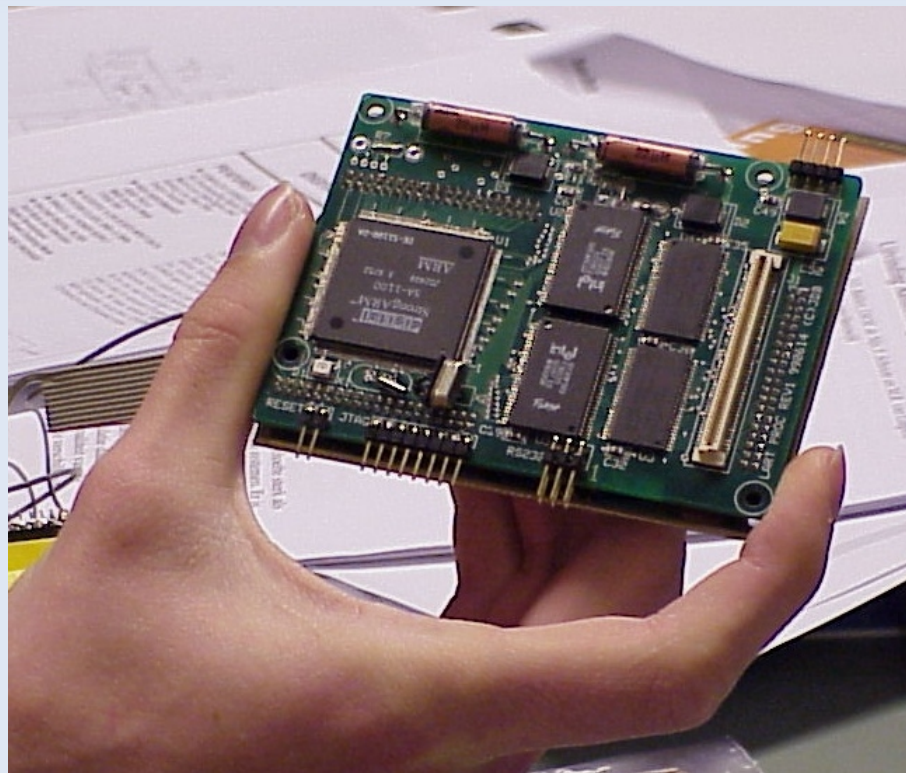
- Open Tools in Science
- Commercial Solutions
 - MS Windows Operating Systems
 - Price

Open Tools History

- Open Tools in Science
- Commercial Solutions
 - MS Windows Operating Systems
 - Price
 - Features/Fixes

Open Tools History

- Open Tools in Science
- Commercial Solutions
- LART Project

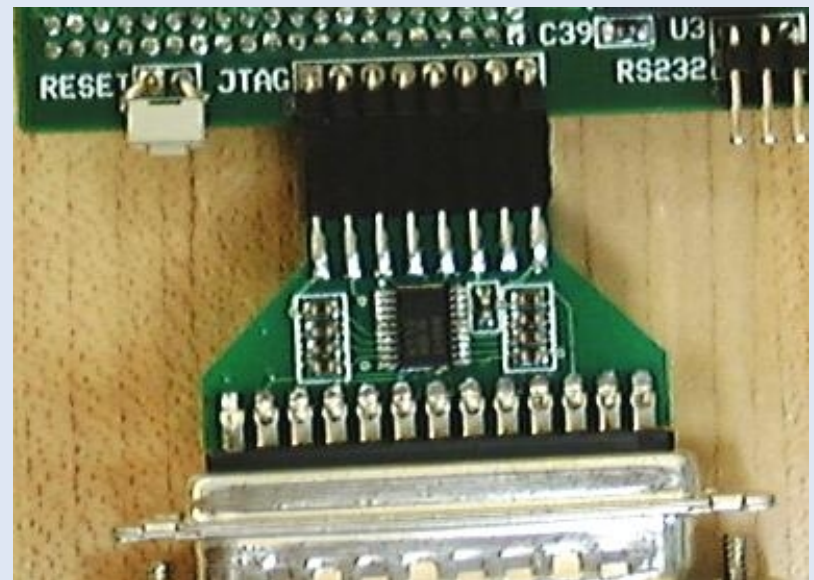


Open Tools History

- Open Tools in Science
- Commercial Solutions
- LART Project
 - Open Platform

Open Tools History

- Open Tools in Science
- Commercial Solutions
- LART Project
 - Open Platform
 - JTAG – Holly Gates Dongle



Open Tools History

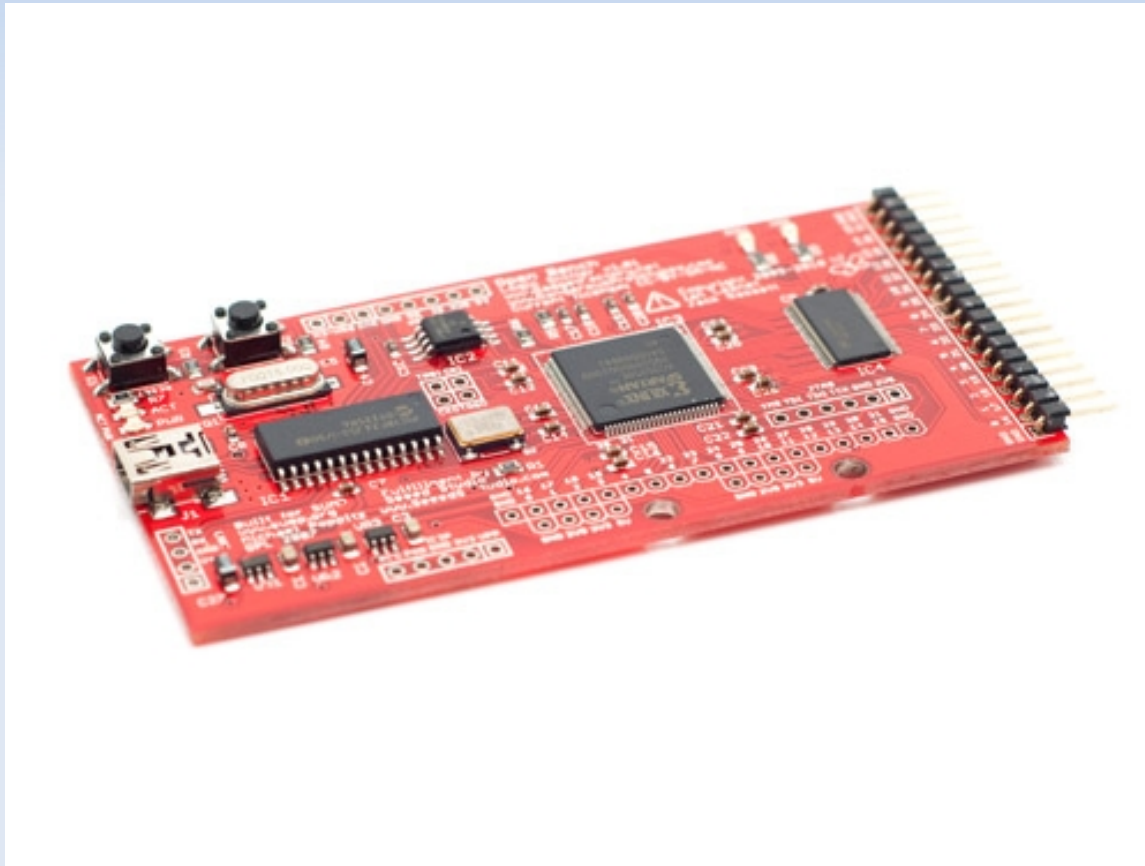
- Open Tools in Science
- Commercial Solutions
- LART Project
 - Open Platform
 - JTAG – Holly Gates Dongle
 - Physical memory access - devmem2

Open Hardware Solutions

- Logic Analyzers

Open Hardware Solutions

- Logic Analyzers
 - Open Workbench Logic Sniffer

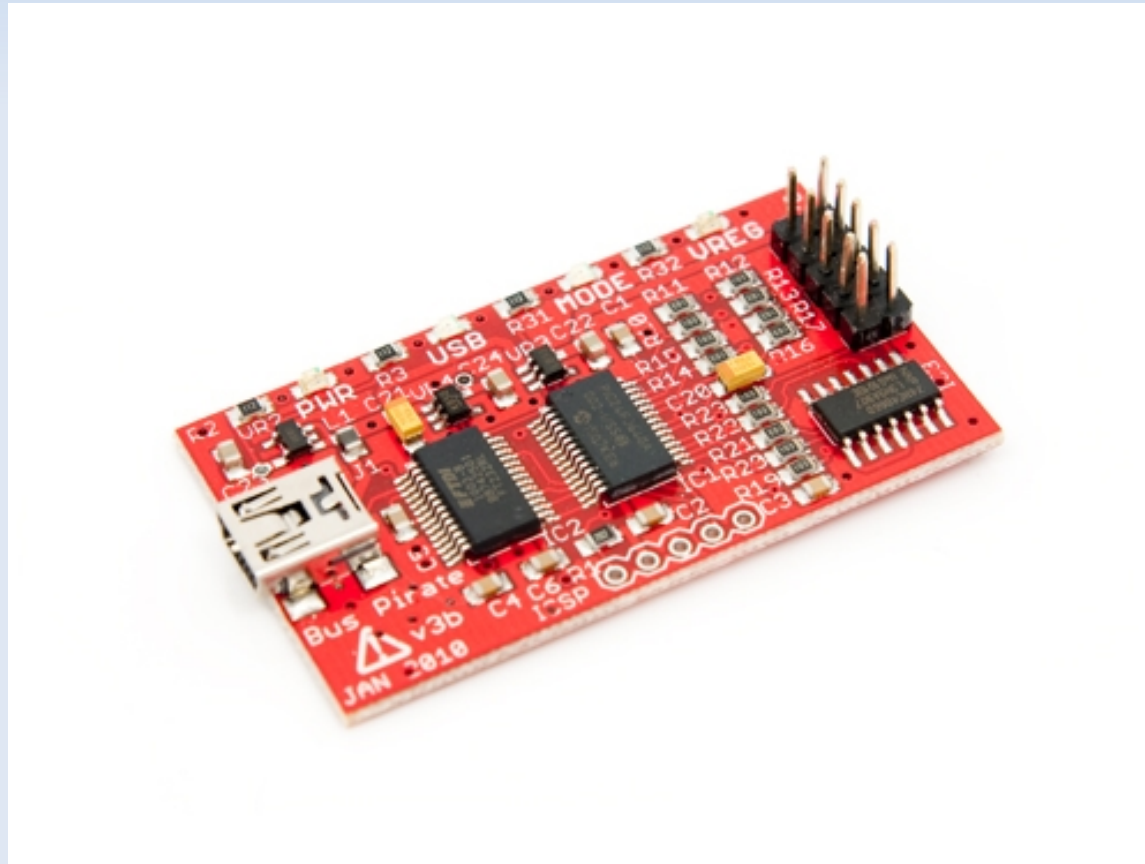


Open Hardware Solutions

- Logic Analyzers
 - Open Workbench Logic Sniffer
 - 70MHz+ sample speeds
 - 32 channels
 - 16 buffered, 5volt tolerant channels
 - USB interface, USB powered
 - USB upgradable everything
 - Make it as DIY as possible
 - \$30-\$40 price range

Open Hardware Solutions

- Logic Analyzers
 - Open Workbench Logic Sniffer
 - Bus Pirate



Open Hardware Solutions

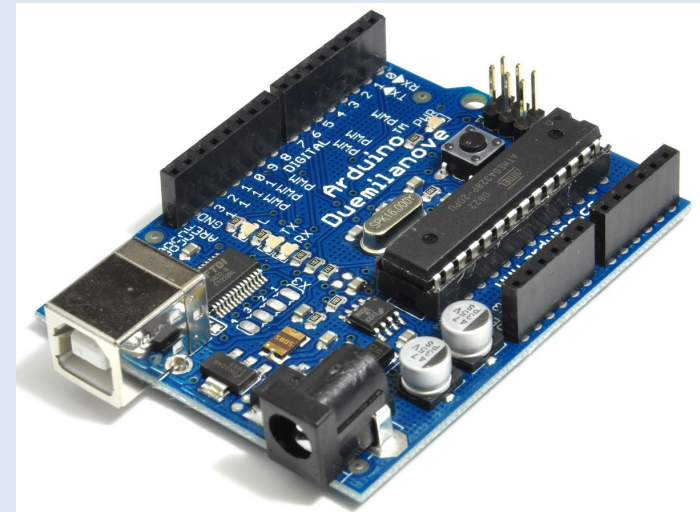
- Logic Analyzers
 - Open Workbench Logic Sniffer
 - Bus Pirate
 - 1-Wire
 - I2C
 - SPI
 - JTAG
 - Asynchronous serial
 - 2- and 3-wire libraries with bitwise pin control
 - Scriptable binary bitbang, 1-Wire, I2C, SPI, and UART modes

Open Hardware Solutions

- Logic Analyzers
 - Open Workbench Logic Sniffer
 - Bus Pirate
 - AVR/Arduino

Open Hardware Solutions

- Logic Analyzers
 - Open Workbench Logic Sniffer
 - Bus Pirate
 - AVR/Arduino (Insert Arduino Jokes Here)



Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes

Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
 - Nano-DSO

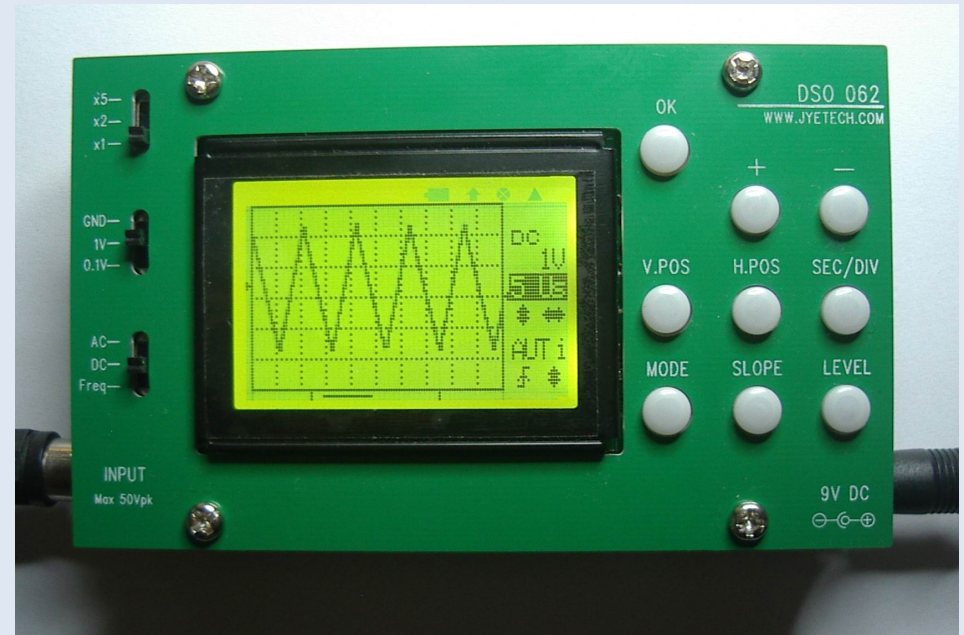
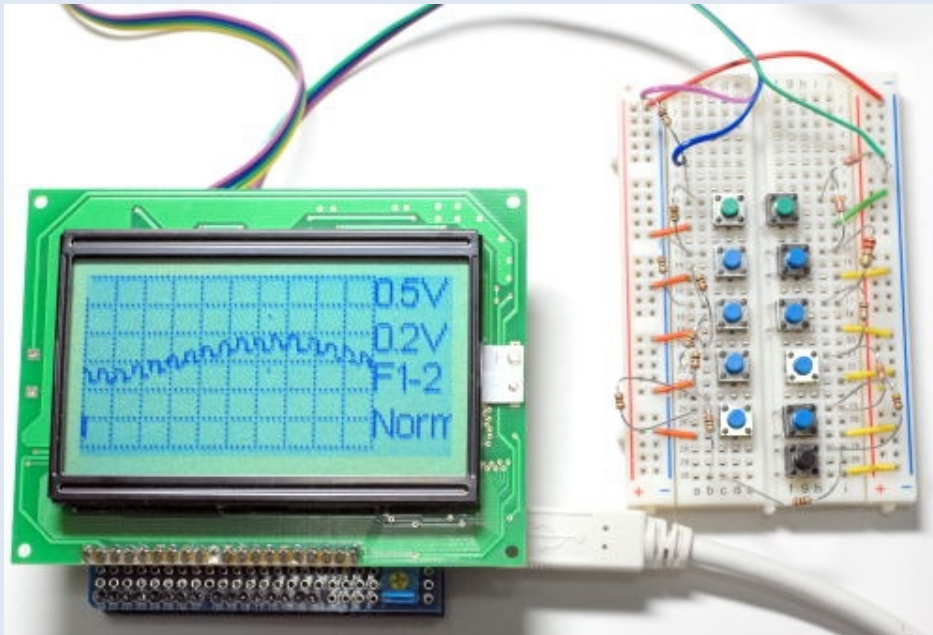


Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
 - Nano-DSO
 - Based on ARM Cortex™-M3 compatible 32 bit platform
 - Unibody PCB design for better reliability
 - Portable and lightweight with 320x240 color LCD
 - Built-in Signal Generator
 - 6 triggering mode

Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
 - Nano-DSO
 - AVR and Arduino (Insert More Arduino Jokes here)



Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
 - Nano-DSO
 - AVR and Arduino
 - PIC Based



Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
- JTAG

Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
- JTAG
 - FT2232

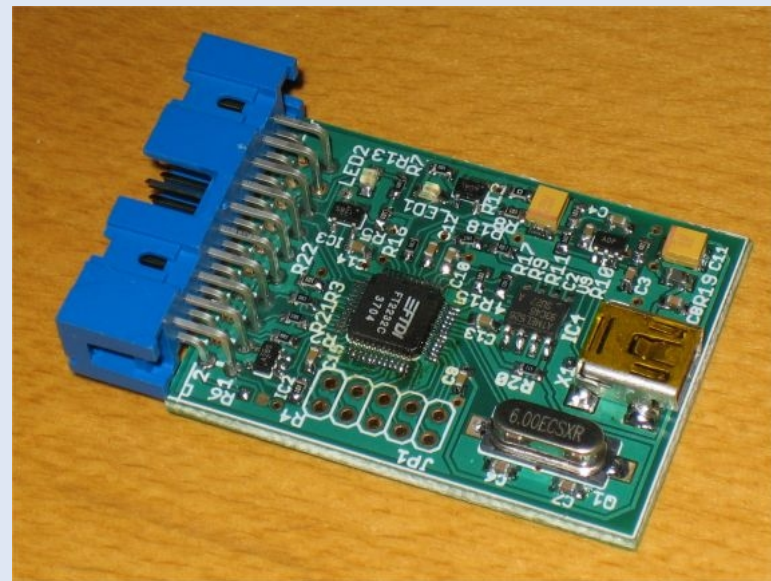
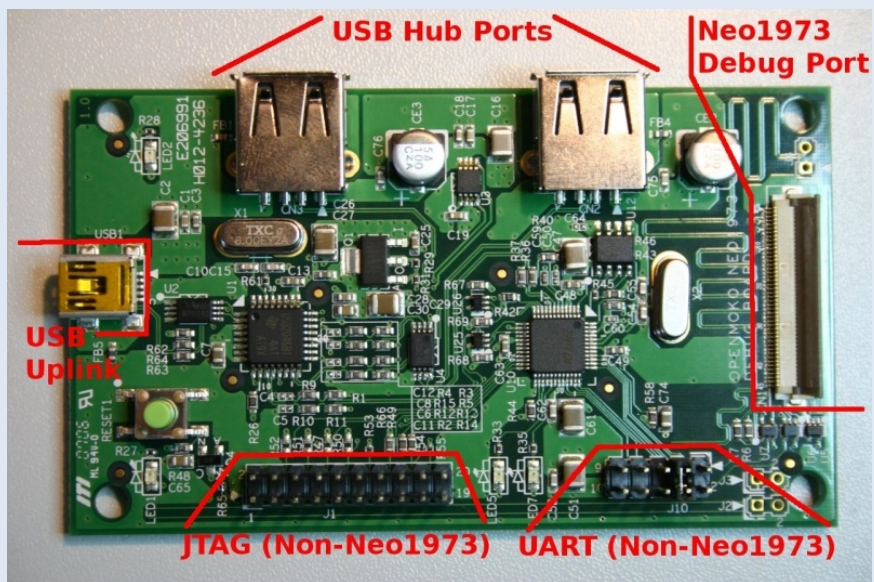


Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
- JTAG
 - FT2232
 - JTAG
 - I2C
 - SPI
 - UART
 - GPIO
 - Open LIBS

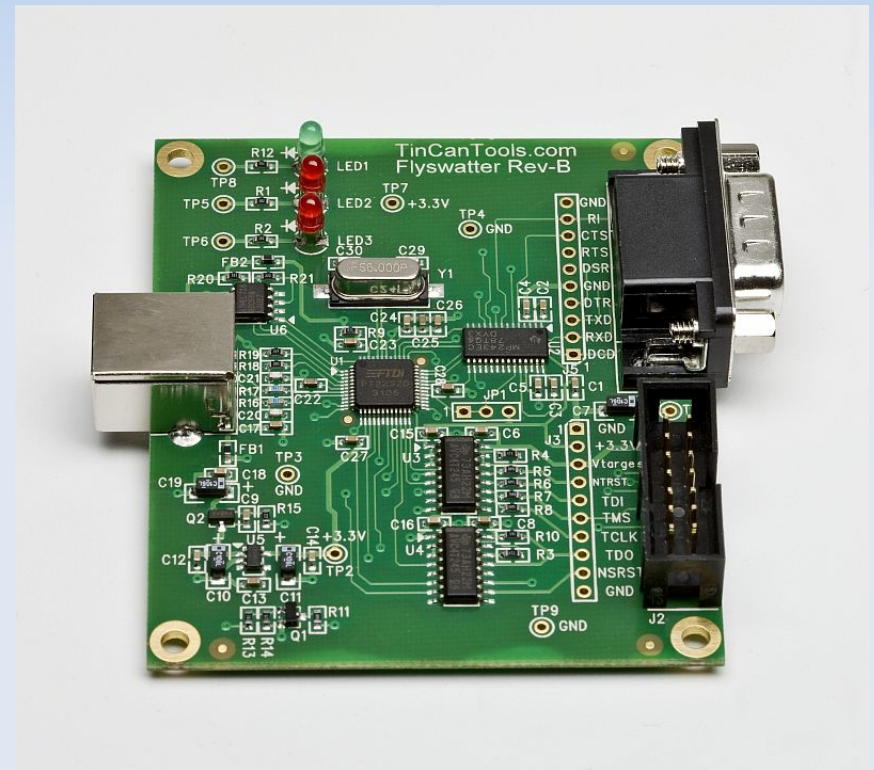
Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
- JTAG
 - FT2232
 - Generic devices



Open Hardware Solutions

- Logic Analyzers
- Oscilloscopes
- JTAG
 - FT2232
 - Generic devices
 - Flyswatter

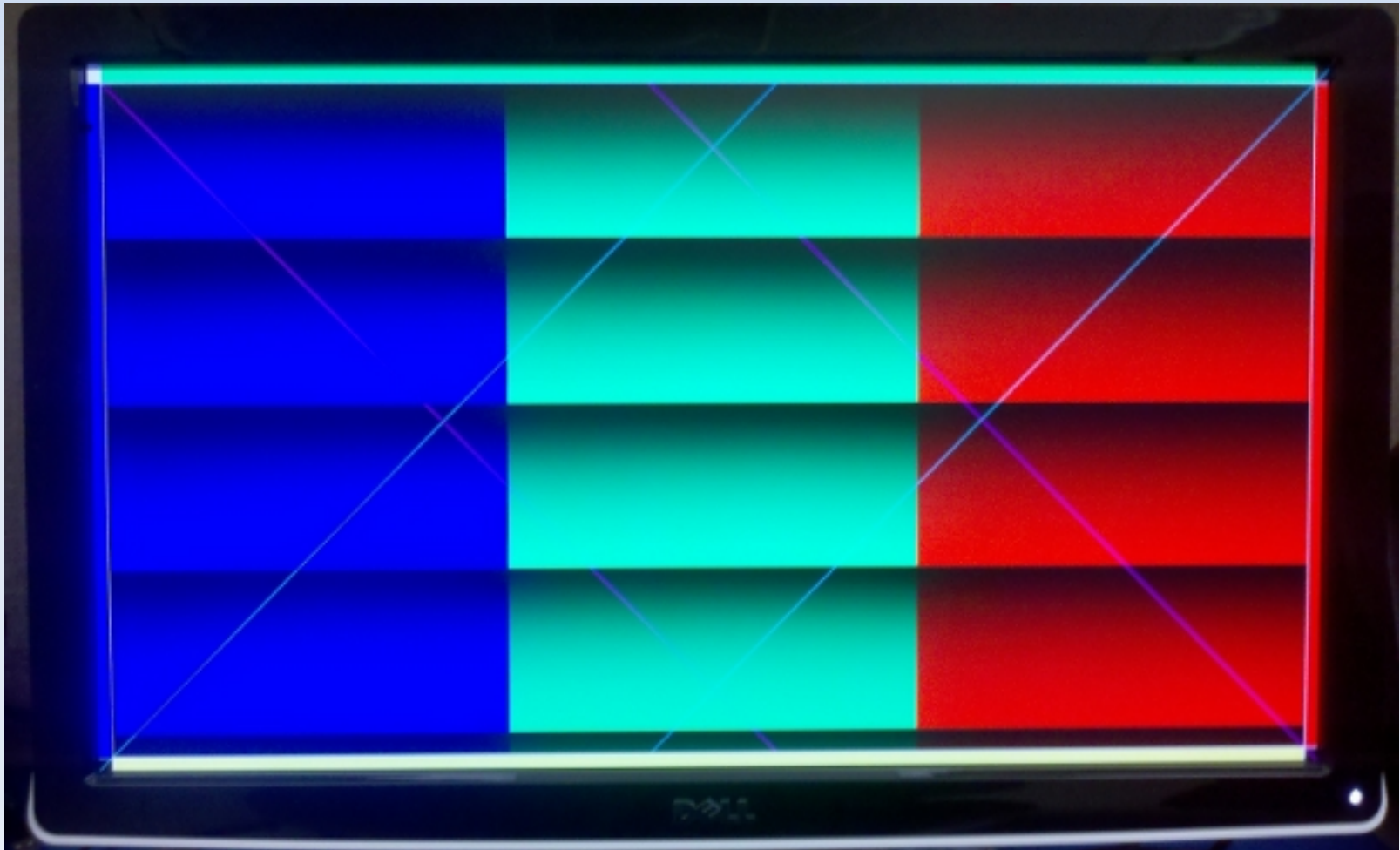


Open Software Solutions

- Platform Based

Open Software Solutions

- Platform Based
 - fb-test



Open Software Solutions

- Platform Based

- fb-test
- evtest

```
Input driver version is 1.0.1
Input device ID: bus 0x3 vendor 0x47d product 0x1029
version 0x110
Input device name: "Kensington      USB/PS2 Wheel
Mouse"
Supported events:
Event type 0 (Sync)
Event type 1 (Key)
    Event code 272 (LeftBtn)
    Event code 273 (RightBtn)
    Event code 274 (MiddleBtn)
    Event code 275 (SideBtn)
    Event code 276 (ExtraBtn)
Event type 2 (Relative)
    Event code 0 (X)
    Event code 1 (Y)
    Event code 8 (Wheel)
Event type 4 (Misc)
    Event code 4 (ScanCode)
Testing ... (interrupt to exit)
```

Open Software Solutions

- Platform Based

- fb-test
- evtest

```
ITesting ... (interrupt to exit)
```

```
Event: time 1302309754.917080, type 2 (Relative), code 0 (X), value 1
Event: time 1302309754.917087, ----- Report Sync -----
Event: time 1302309756.837092, type 2 (Relative), code 0 (X), value -1
Event: time 1302309756.837099, ----- Report Sync -----
Event: time 1302309756.845079, type 2 (Relative), code 0 (X), value -3
Event: time 1302309756.845086, ----- Report Sync -----
Event: time 1302309756.853079, type 2 (Relative), code 0 (X), value -4
Event: time 1302309756.853083, type 2 (Relative), code 1 (Y), value 1
Event: time 1302309756.853086, ----- Report Sync -----
Event: time 1302309756.861079, type 2 (Relative), code 0 (X), value -5
Event: time 1302309756.861083, type 2 (Relative), code 1 (Y), value 1
Event: time 1302309756.861086, ----- Report Sync -----
Event: time 1302309756.869078, type 2 (Relative), code 0 (X), value -7
Event: time 1302309756.869083, type 2 (Relative), code 1 (Y), value 1
```

Open Software Solutions

- Platform Based
 - fb-test
 - evtest
 - devmem2

Open Software Solutions

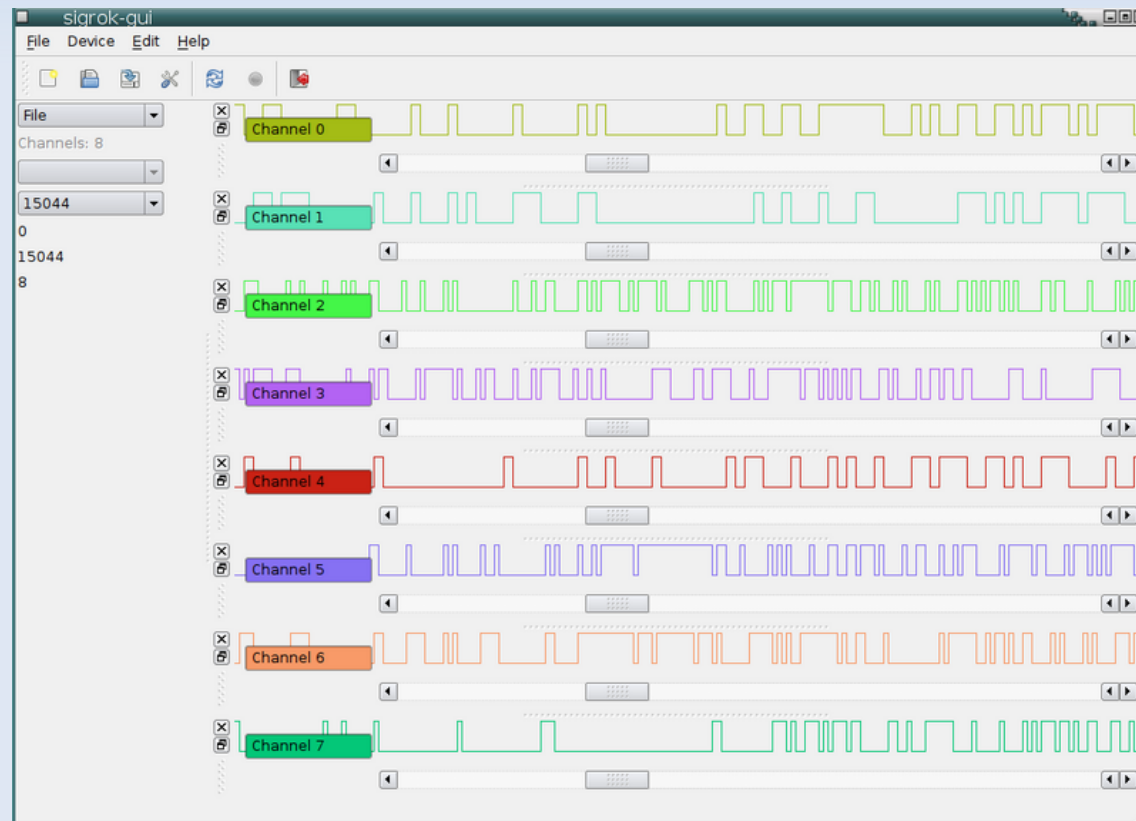
- Platform Based
 - fb-test
 - evtest
 - devmem2
 - Vendor variations
 - Busybox
 - Buildroot
 - OE

Open Software Solutions

- Platform Based
- Host Based

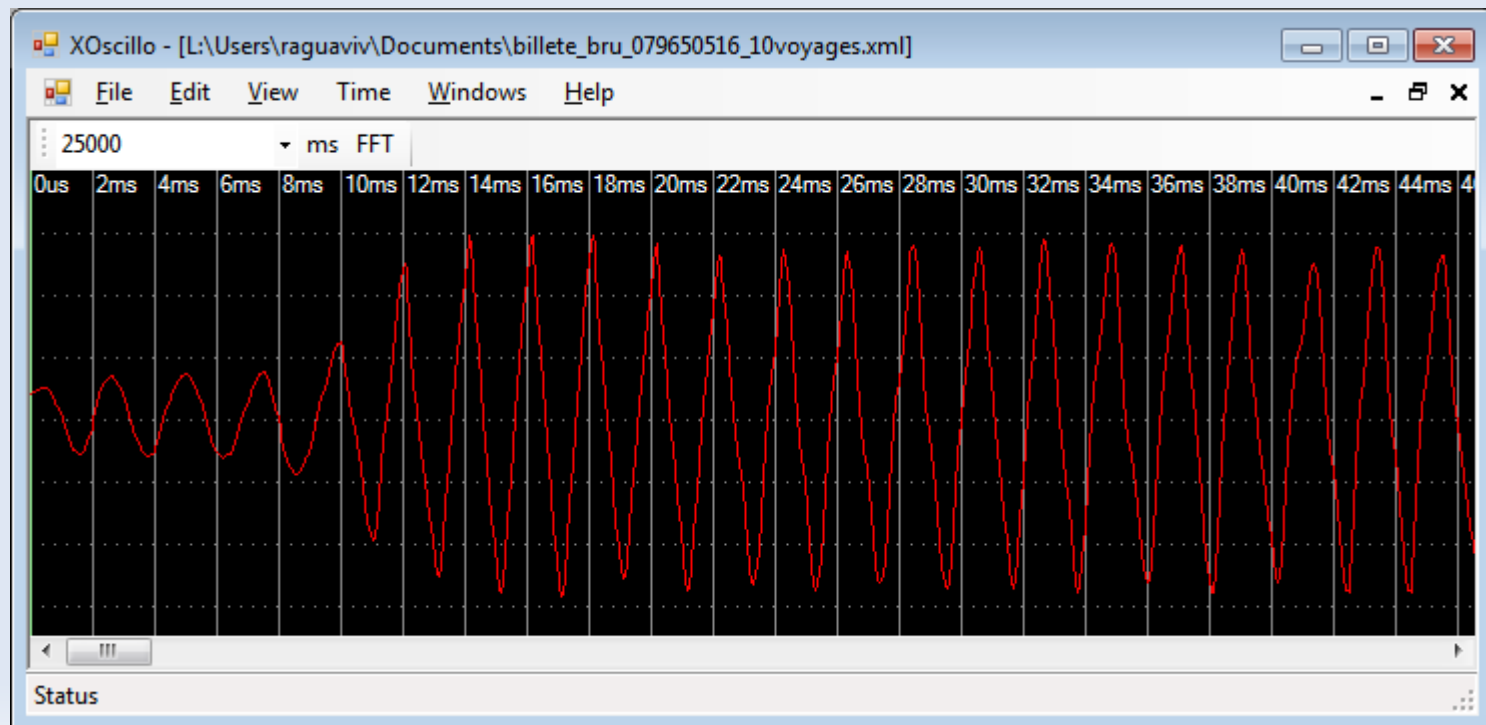
Open Software Solutions

- Platform Based
- Host Based
 - Logic Analyzer - Sigrok



Open Software Solutions

- Platform Based
- Host Based
 - Logic Analyzer - Sigrok
 - Oscilloscope - XOscillo



Open Software Solutions

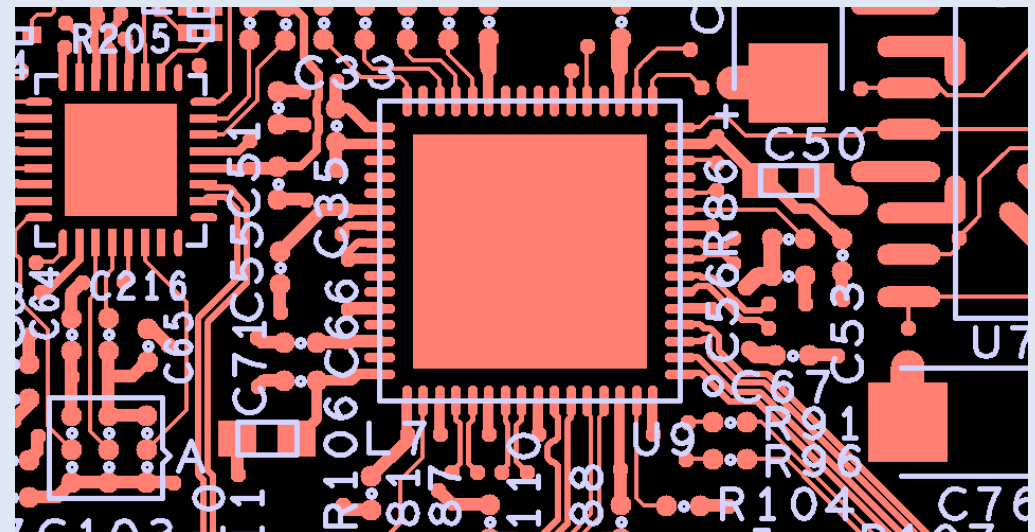
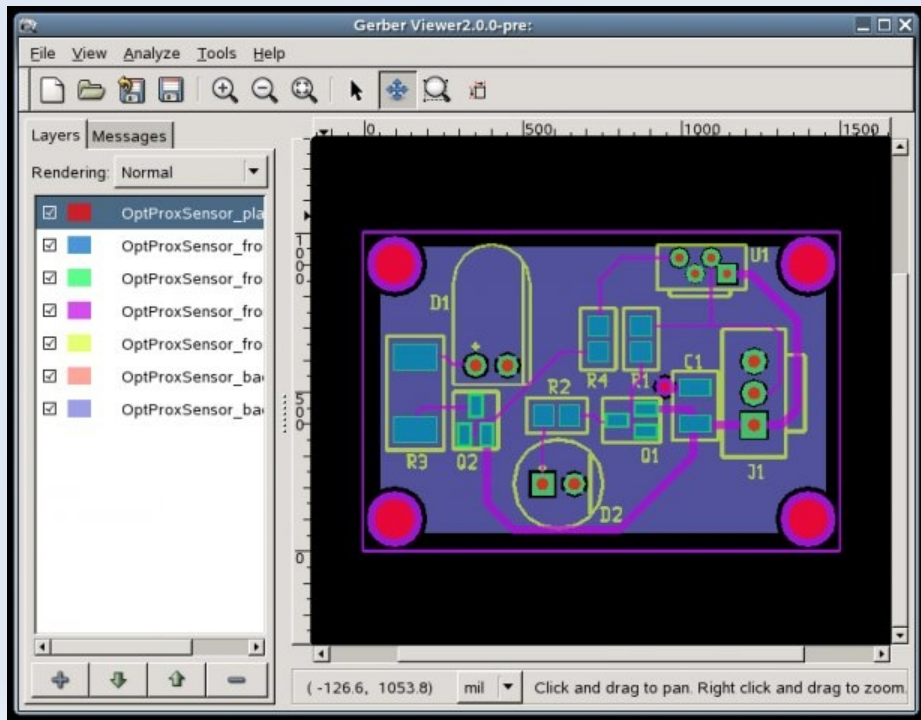
- Platform Based
- Host Based
 - Logic Analyzer - Sigrok
 - Oscilloscope - XOscillo
 - JTAG - OpenOCD

Open Software Solutions

- Platform Based
- Host Based
- Desktop Utilities

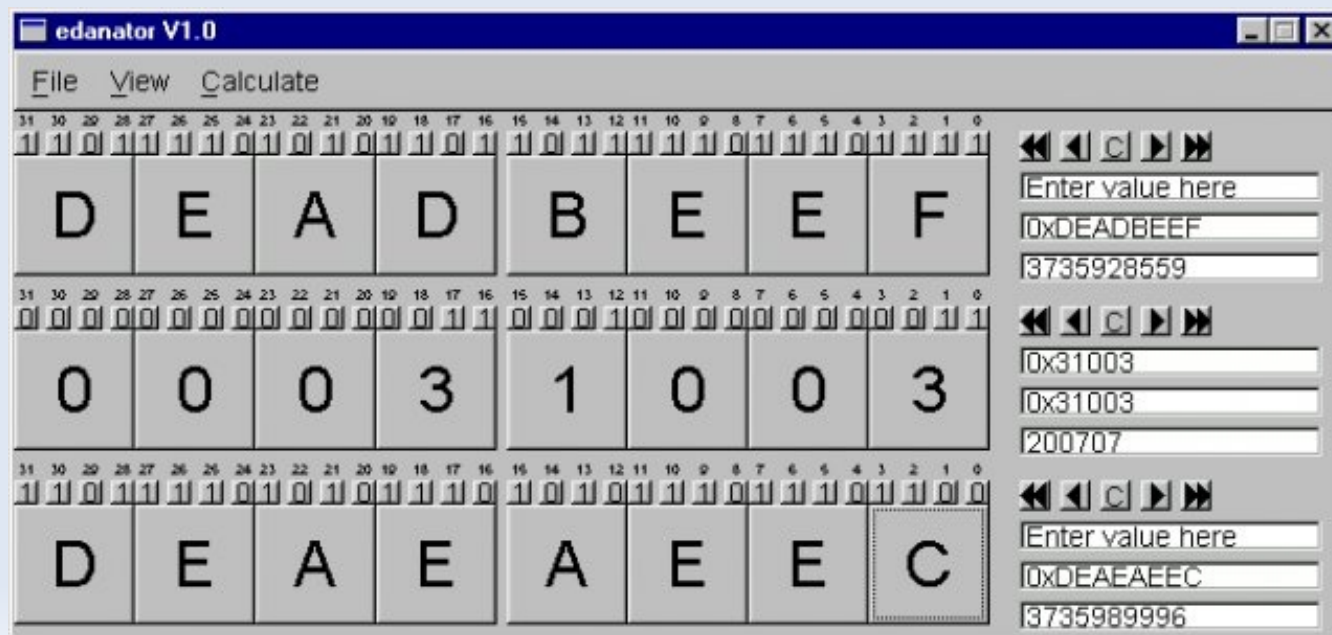
Open Software Solutions

- Platform Based
- Host Based
- Desktop Utilities
 - Gerbv



Open Software Solutions

- Platform Based
- Host Based
- Desktop Utilities
 - Gerbv
 - Edanator



Open Software Solutions

- Platform Based
- Host Based
- Desktop Utilities
 - Gerbv
 - Edanator
 - GUVView



Conclusion

- Long History of Open Tools

Conclusion

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- Open Hardware Tools

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- Open Hardware Tools
- Open Software Tools

Conclusion

- Long History of Open Tools
- Open Hardware Tools
- Open Software Tools
- Incentive to contribute

Conclusion

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- Open Hardware Tools
- Open Software Tools
- Incentive to contribute
- Transition to open tools

Conclusion

- Long History of Open Tools
- Open Hardware Tools
- Open Software Tools
- Incentive to contribute
- Transition to open tools
- Documentation
 - http://www.elinux.org/Open_tools

Conclusion

Questions?